Western NC Renewable Energy Initiative Workshops - Please complete and return to the Wind Power Workshops, Office of Conferences and Institutes, Appalachian State University, ASU Box 32042, University Hall, Boone, North Carolina 28608-2042.

Name _____ Phone # _____

Address _____ City _____ State _____ Zip _____

E-mail _____ Fax# _____

Dietary preference _____

How did you hear about the workshops _____

Workshop attending: ❑ **Introduction to Small Scale Wind Energy 4/22 (06WIND1)** ❑ **Microhydro 5/27-28 (06WIND2)** ❑ **PV/Wind Installation 6/24-25 (06WIND3)**
❑ **Introduction to Small Scale Wind Energy 9/9 (06WIND5)** ❑ **Wind Resource Assessment 9/22 & 23 (06WIND6)** ❑ **Small Scale Wind Energy 9/21-22 (06WIND7)**

Full payment must be sent with the application. Pay by check, payable to Appalachian State Univ. **or** by VISA/MC. If paying by credit card, please complete the following information. Faxed applications are permitted for credit card payments only by faxing to (828)262-4992. VISA/MC ONLY. **If faxing, do not mail application.**

Credit Card# _____ Expiration Date _____ Amt charged _____

Card Holder's Name _____

Card Holder's Address _____

Card Holder's Signature _____

Cancellation: Refunds will be given with cancellation 10 days prior to the workshop start date (minus $30 processing fee). Appalachian State University reserves the right to cancel this program for any reason.

Who should attend?

- Land, home, business, or farm owners
- Students, tradespersons and inventors
- Teachers
- Elected officials
- Utility companies/cooperatives
- Any energy user interested in harnessing power from solar, wind or water.

Details: *wind.appstate.edu or call (828)262-7333*

Beech Mountain Workshops

The WNCREI Wind Energy Research & Demonstration facility is a 5-acre lot located on top of Beech Mountain, featuring six wind turbines including: SWWP AirX, SWWP Air Industrial, SWWP Whisper 100, SWWP Whisper 200, SWWP Whisper 500, SWWP Beta 1.8, Jacobs 31-20. The 5200ft site has been in operation since May 2004 and is maintained by ASU faculty, staff, and students. The site is grassy, sunny, and often windy. Bring a water bottle, a hat, sunscreen, and a camera. Food, drink and lots of good information will be provided.

PARKING is available onsite or at the Pinnacle Inn Resort.

HOTEL accommodations include:

- Pinnacle Inn (828)387-2231, Beech Mountain, adjacent to the wind site, www.pinnacleinnresort.com
- The 4-Seasons Inn (828)387-4211, Beech Mountain
- Best Western (828)877-4553, Banner Elk

CAMPING is available onsite for free. This is primitive camping, no hookups or bathrooms. Let the turbines lull you to sleep.

DIRECTIONS can be found at wind.appstate.edu. You can also use maps.yahoo.com with an address of Pinnacle Inn Road, Beech Mountain, NC.

ASU Workshops

PARKING is available in the parking deck on Rivers Street.

HOTEL accommodations include:

- Broyhill Inn (828)262-2204, (800)951-6048, www.broyhillinn.com
- Fairfield Inn (866)871-7425, www.hgmhotels.com
- More info at www.visitboonenc.com/lodging.htm

DIRECTIONS can be found at www.web.appstate.edu/maps

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Hydro-Power for Home Use

Southwest Windpower
Renewable Energy Made Simple

NORTH CAROLINA SOLAR CENTER

energy Appalachian

Appalachian STATE UNIVERSITY
Office of Conferences & Institutes
ASU Box 32042
Boone, NC 28608-2042

Western North Carolina Renewable Energy Initiative

2006 Workshop Series

Please join us for these exciting workshops in the beautiful North Carolina Mountains.

Saturday, April 22
Introduction to Small Scale Wind Energy

Saturday & Sunday, May 27 & 28
Microhydro with Don Harris

Saturday & Sunday, June 24 & 25
PV/Wind Installation with Shawn Fitzpatrick

Sunday, August 27
Small Scale Wind Energy at the 2006 SEE Expo

Saturday, September 9
Introduction to Small Scale Wind Energy

Friday evening & Saturday, September 22 & 23
Wind Resource Assessment

Saturday & Sunday, October 21 & 22
Small Scale Wind Energy
with Southwest Windpower

Register at
wind.appstate.edu
or call (828) 262-2933 with registration questions

State Energy Office ENERGY www.energync.net 1-800-662-7131 Appalachian STATE UNIVERSITY

Western North Carolina contains abundant and readily available wind, solar, and microhydro resources for producing home-grown, clean, and secure energy. The North Carolina Small Wind Initiative (NCSWI) has now expanded into the Western North Carolina Renewable Energy Initiative (WNCREI) and we are dedicated to introducing the region to clean, affordable, and reliable ways to meet everyday energy needs.

Wind

Research at Appalachian State University has identified 850,000 acres of land in Western NC with wind resources adequate for residential electricity production.

- WNCREI operates a wind energy research and demonstration facility on Beech Mountain to test and demonstrate a variety of commercially available small wind turbines.
- We provide consulting services to the public to help determine if wind is right for you.
- We operate an Anemometer Loan Program to help interested property owners measure their wind resource.

Solar

This is the time to take advantage of excellent state and federal tax incentives for solar energy projects. Our widespread solar resource can be used for water heating, space heating, or electricity production using photovoltaic systems.

Microhydro

A small stream can produce a considerable amount of power 24 hours a day. We offer consulting services for the public on how to take advantage of this excellent renewable energy source.

Workshops

The WNCREI is proud to host the 2006 workshop series to empower groups and individuals with the tools and resources to pursue wind, solar, and microhydro technologies for energy independence. We have partnered with state and national leaders to bring you the most comprehensive educational and hands-on experience possible.

Introduction to Small Scale Wind Energy

Saturday, April 22 or Saturday, September 9

These two workshops will be held at our Wind Energy Research & Demonstration facility in Beech Mountain, NC. Participants will learn about: characteristics of a good wind site; how to assess your wind resource; siting a wind turbine; the various types of residential wind turbines on the market; towers and other system components; regulations and incentives; and how to do it right. The hands-on portion of the class will involve a tour of the Beech Mountain facility featuring six turbines ranging from the 400W AirX to the 20kW Jacobs.

Workshop leaders: These introductory workshops will be led by faculty and staff from Appalachian State University's Appropriate Technology (AT) program and the WNCREI staff. The AT program has over 20 years of experience designing, constructing and testing a wide variety of renewable energy technologies and has led the region in wind energy projects and research activities.
Cost: $90 regular /$40 student

Microhydro with Don Harris & WNCREI staff

Saturday & Sunday, May 27 & 28

This workshop will be held on the campus of Appalachian State University with a field trip to a local microhydro installation. Participants will learn about: site assessment techniques including the measurement of head and flow; system design; types of turbines and their associated performance and cost; system components such as the intake, penstock and balance of system; maintenance and troubleshooting; case studies; tips and tricks from an industry expert.

Workshop leader: Don Harris of Harris Hydro is a national microhydro expert. He has developed residential hydro systems since 1981 and is responsible for nearly 3,000 successful systems. The Harris system is an efficient, durable battery charging pelton turbine making it the most popular micro-turbine in the US. Don's years of experience will provide participants with a unique opportunity to learn from one of the industry's leading experts.
Cost: $150 regular/$70 student

PV/Wind Hybrid Installation Workshop

with Shawn Fitzpatrick and WNCREI staff

Saturday & Sunday, June 24 & 25

This workshop will be held at our Wind Energy Research & Demonstration facility in Beech Mountain, NC. Participants will learn about: the natural compatibility of wind and solar resources; how to design and install a PV/wind system; the basics of batteries, inverters, PV racks, PV panels, wiring, wind turbines, and towers. There will be a mix of on site classroom time and hands-on system installation.

Workshop leader: Shawn Fitzpatrick is a Solar Energy Specialist for the NC Solar Center at NC State University. He heads the Center's professional PV training and system design assistance programs. Shawn holds an M.S. in Mechanical Engineering from NC State University and a B.S. in Mechanical Engineering from Old Dominion University, and is also a North Carolina licensed Professional Engineer (PE). Shawn has over nine years of experience with renewable energy systems including PV, solar thermal, hybrid PV/Thermal and wind power.
Cost: $150 regular/$70 student

Small Scale Wind Energy at the SEE Expo

Sunday, August 27

Join us as we travel to the 2006 Southern Energy & Environment Expo at the Western NC Agricultural Center in Fletcher, NC. This is an annual event designed to showcase renewable energy and sustainable economics in a context of responsible environmental stewardship. The WNCREI staff will be leading a ½ day lecture on wind energy followed by a ½ day hands-on wind turbine installation workshop.
More info at www.seeexpo.com
Cost: $40 lecture/$40 hands-on workshop

Wind Resource Assessment

Friday evening & Saturday, September 22 & 23

This workshop will begin on the campus of Appalachian State University with a field trip on Saturday. The participants will receive classroom instruction on the fundamentals of wind resource assessment followed by a hands-on workshop where we will install a 20-meter meteorological tower as part of our Anemometer Loan Program. The experts on the WNCREI staff will be leading this two-day hands-on workshop.
Cost: $150 regular/$70 student

Small Scale Wind Energy with Southwest Windpower

Saturday & Sunday, October 21 & 22

This workshop will be held at our Wind Energy Research & Demonstration facility in Beech Mountain, NC where we feature the full line of Southwest Windpower (SWWP) products. Participants will learn the basics of residential wind systems from the world's leading manufacturer of small wind turbines. The hands-on portion of the workshop will include a tour of the SWWP products and installation of SWWP's newest product, the Beta 1.8, described as "the first affordable energy producing appliance for homes and businesses".

Workshop leaders: Driven by a deep and abiding commitment to the environment, Southwest Windpower continues to design, manufacture and sell state-of-the-art wind energy systems of high-quality, durability and affordability. Josh Levinson is SWWP's North American Sales Director. Jay Yeager is the Technical Services manager for SWWP. Throughout the years he has analyzed literally thousands of applications and participated in numerous installations of SWWP products both for field-testing and consumer use. More info at www.windenergy.com.
Cost: $150 regular/$70 student

Register at wind.appstate.edu or call (828)262-2933 with registration questions